NGDA Dataset Report

Official NGDA Title: Geoid Models

Metadata Record Title: Geoid Height and Deflections of the Vertical Models - National Geospatial Data Asset (NGDA) Geoid Models

A–16 NGDA Theme: Geodetic Control

Executive NGDA Theme Champion(s):

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Metadata:

Registration Status: Complete

Registered on 10/31/2014

GeoPlatform Link*: http://www.geoplatform.gov/node/243/a838c9d3-d880-4ca4-b01e-e36c739df98f

Data.gov Metadata Link*: http://catalog.data.gov/harvest/object/fcb49724-4adf-44a8-9129-160efe1564e5/html

*If the metadata has been updated and reharvested after publication of this report, the link may no longer be valid. The dataset may be searched for manually in Data.gov or GeoPlatform.gov.

NGDA Lifecycle Maturity Assessment (LMA) Report

Time Frame:

Baseline assessment responses include dataset activities from 1996 to 2015.

LMA Submission:

Status: Complete

Date: 10/14/2015

Extension Requested: No

LMA Reviewer(s):

Supervisor: steve.hilla@noaa.gov

Theme Lead: Neil Weston neil.d.weston@noaa.gov

Executive Champion: Did not review

SAOGI*: Did not review

Other: Dan Roman, dan.roman@noaa.gov

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Attachments:

To get access to any attachments referenced in the report, email the LMA Help Desk at NGDA_LMA_help@fgdc.gov. Please use the subject "Dataset Report Attachment(s)" and indicate the associated official NGDA title.

*Senior Agency Official for Geospatial Information (SAOGI)

Lifecycle Maturity Assessment (LMA) Summary

Overall Maturity:

Optimized; Established

General Questions: 100%

Optimized; Established

Stage 1 - Define/Plan: 100%

Optimized; Established

Stage 2 - Inventory/Evaluate: 100%

Optimized; Established

Stage 3 - Obtain: 87%

Mature; Consistent

Stage 4 - Access: 100%

Optimized; Established

Stage 5 - Maintain: 62%

Managed; Predictable

Stage 6 - Use/Evaluate: 100%

Optimized; Established

Stage 7 - Archive: 100%

Optimized; Established

NGDA Dataset Maturity Definitions:

How To Calculate Maturity: https://www.geoplatform.gov/sites/default/files/How_to_Calculate_Maturity.pdf

Maturity	Maturity Characteristics for All Lifecycle Stages
Optimized; Established Rank = 5	Dataset meets virtually all business needs of all users. The dataset is considered authoritative by owners and secondary users. It is curated across all stages of the approved lifecycle. Future needs are defined on a regular basis and resources for addressing both current and future business requirements are available.
Mature; Consistent Rank = 4	Dataset meets all the business needs of the primary owner and most of the secondary users. The dataset is curated and used as authoritative by the primary owner. Dataset is used widely by secondary users actively engaged in sustaining the dataset. Future needs are identified and steps are planned to address these. All stages are supported and reviewed on a recurring basis. The dataset is well managed in relation to the approved lifecycle.
Managed; Predictable Rank = 3	Dataset meets a significant number of the business needs of the primary owner and is widely used as an authoritative resource by secondary users. Benchmark activities are occurring in at least four of the approved lifecycle stages. Management practices in relation to the approved lifecycle is moderate but consistent. Dataset is integrating changing business requirements in lifecycle stages impacting overall maturity.
Transition; Transformation Rank = 2	Dataset meets business needs of the primary owner and has moderate use by secondary users. Benchmark activities are occurring in at least three stages. Efforts to integrate funding, include partners, and obtain data are not supported in a sustained manner. Management practices in relation to the stages of the approved lifecycle is limited.
Planned; Initial Development Rank = 1	Dataset limited in meeting business needs of the primary owner. Benchmark activities in the approved lifecycle are just starting to consider secondary uses, partnerships are forming to support additional dataset uses. Dataset development is in a very early stage. Minimal or limited management against the benchmarks in the approved lifecycle.
No Activity Rank = no activity	Dataset meets project or local business needs of the primary owner, secondary or additional uses or users were not considered, not recognized as an authoritative data or is part of a similar dataset. Not managed to any of the benchmarks in the approved lifecycle.

General Questions for All Stages

1) Is there a recurring process to obtain funding for all lifecycle stages of this dataset?

Answer: Funding support is part of agency budget on a recurring basis, funding is consistent and tied to business processes, and supports all lifecycle stages.

Justification Comment: **Attachment(s):** 0

Development and maintenance of GEOID models is aligned with agency's mission. Funding for all lifecycle stages of geoid modeling is an integral part of agency's annual budget request.

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2) Is there a process in place to ensure that open government and transparency guidelines are followed in all lifecycle stages for this dataset?

Answer: Process is published as appropriate with respect to sensitivity requirements, process is transparent, published appropriately.

Justification Comment: **Attachment(s):** 0

Process established. Products follow a procedure that includes public review, feedback, and agency's approval. All models are public accessible on webpage http://www.ngs.noaa.gov/GEOID/

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3) Are there processes and tools in place so that staff are sufficiently knowledgeable to ensure a continuity of the dataset for all stages of the lifecycle, especially during staffing transitions?

Answer: Processes and tools to ensure dataset continuity are in place and implemented for all lifecycle stages.

Justification Comment: **Attachment(s):** 0

NGS maintains a rich set of documentation and scientific papers on tools for all lifecycle stages of geoid modeling(http://www.ngs.noaa.gov/PUBS_LIB/pub_index.html). NGS ensures maintenance and improvement of core competencies via brown bags, online training material, informal team meetings. NGS employee performance plans further emphasize the need for maintaining and improving core competencies.

STAGE 1 - Define/Plan

4) Are user and business requirements defined and formalized?

Answer: A recurring process is in place, including defining new partner and stakeholder business needs as they arise, and is fully implemented.

Justification Comment: **Attachment(s):** 0

NGS maintains partnerships with state, local, academia, and international communities to solicit input regarding existing and new products. User and business requirements are clearly defined in NGS Ten-Years Plan (http://www.ngs.noaa.gov/web/news/Ten_Year_Plan_2013-2023.pdf)

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5) How are partners/stakeholders involved in the requirements collection process?

Answer: A recurring process is in place, including defining new partner and stakeholder business needs as they arise, and is fully implemented.

Justification Comment: **Attachment(s):** 0

NGS has an active state advisory program (http://www.ngs.noaa.gov/ADVISORS/). State advisers work closely with the state(s) they represent, identify stakeholder needs, and ensure those needs are factored into agency's short term and long term plans. NGS has an active Products and Services Committee where current and future products and services are reviewed and approved based on stakeholders input.

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6) Is there a quality assurance process for the dataset?

Answer: Quality assurance published as appropriate with respect sensitivity requirements.

Justification Comment: **Attachment(s):** 0

NGS employs rigorous quality assurance procedures with regards to the geoid at all stages of the lifecycle prior to dissemination. Geoid accuracies are published on the datasheet and web pages (http://www.ngs.noaa.gov/GEOID/).

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7) Is there a process to evaluate the sensitivity, privacy, and confidentiality of this dataset?

Answer: Sensitivity, privacy, and confidentiality evaluations fully implemented, reviewed and updated on a recurring basis.

Justification Comment: **Attachment(s):** 0

Checks are in place to protect the sensitivity of data where warranted. The geoid models have to get approval of the Product Review Board and Products and Services Committee before going public.

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8) Are defined data standards used in collecting, processing, and/or rendering the data?

Answer: Standards fully implemented documented and published as appropriate.

Justification Comment: **Attachment(s):** 0

NGS has a set of standards and guidelines to collect and process data. These standards and guidelines are collectively referred to as bluebooking (http://www.ngs.noaa.gov/FGCS/BlueBook/). Data are disseminated following publishability guidelines.

STAGE 2 - Inventory/Evaluate

9) Is there a process for determining if data necessary to meet requirements already exist from other sources (either within or outside the agency) before collecting or acquiring new data?

Answer: Process for determining appropriate data is being reused fully implemented, reviewed, and updated on a regular basis.

Justification Comment: **Attachment(s):** 0

NGS is the only agency to provide the geoid models to the public.

STAGE 3 - Obtain

10) Is there a process for obtaining data in relation to this dataset?

Answer: Process is fully implemented, reviewed and updated on a regular basis.

Justification Comment: **Attachment(s):** 0

GRAV-D airborne gravity data is collected regularly throughout the year and will continue through 2022 (http://www.ngs.noaa.gov/GRAV-D/). Additional terrestrial gravity data, GPS on benchmarks are collected on needed basis.

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11) Is the metadata in a FGDC endorsed geospatial metadata standard?

Answer: Metadata is available in a format endorsed by the FGDC, it fully describes the dataset and provides all the information required to make the dataset discoverable, accessible, and usable.

Justification Comment: **Attachment(s):** 0

All data releases are accompanied by FGDC compliant metadata in CSDGM format that is produced and published through MermAID, which makes it discoverable, accessible, and usable through online government portals (https://www.fgdc.gov/metadata/geospatial-metadata-standards).

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12) How complete is the geographic coverage as defined in the requirements for the dataset?

Part 1 Answer: Business requirements for cyclic updates identified and a process is in place.

Part 2 Answer: Data set is roughly 50% of the geographic coverage is presently complete per current requirement.

Justification Comment: **Attachment(s):** 0

There are currently one one million terrestrial gravity data available. Over one hundred thousand GPS on bench marks are in NGS database. GRAV-D airborne gravity data is about 50% complete (http://www.ngs.noaa.gov/GRAV-D/data_products.shtml).

STAGE 4 - Access

13) Do you have a process for providing users access to the data in an open digital machine readable format?

Answer: User access process is fully implemented, data is available, process is reviewed and updated on a recurring basis.

Justification Comment: **Attachment(s):** 0

All GEOID models are provided in ASCII, PC and UNIX binary format. A process is in place for providing users access to the models (http://www.ngs.noaa.gov/GEOID/GEOID12B/GEOID12B_data.shtml).

STAGE 5 - Maintain

14) Is there a maintenance process for updating and storing the dataset?

Answer: Dataset maintenance process is under development.

Justification Comment: **Attachment(s):** 0

The GEOID models have been updated periodically using new and improved data sets and better computation methods (http://www.ngs.noaa.gov/GEOID/).

15) Is there an error correction process as part of dataset maintenance?

Answer: Error correction process includes user notification, process reviewed on a recurring basis.

Justification Comment: **Attachment(s):** 0

There are established procedures for checking and correcting the geoid models. Before the models published, there are certain time for public review, feedback and update. For published models, errors are corrected by updated new models.

STAGE 6 - Use/Evaluate

16) Is there a process to determine if the dataset meets user needs?

Answer: Process is fully implemented and repeated on a recurring basis.

Justification Comment: **Attachment(s):** 0

GEOID models are one of NGS key products. User needs have been identified and addressed in the 1990s after the wide use of the GPS technology. New user needs are identified and it is addressed in NGS Ten-Years Plan (http://www.ngs.noaa.gov/web/news/Ten_Year_Plan_2013-2023.pdf).

17) Is there a process to provide users information on how to access and properly use the dataset?

Answer: Process is fully implemented supporting access and proper use, process is reviewed on a recurring basis.

Justification Comment: **Attachment(s):** 0

Information is provided in detail at NGS website: http://www.ngs.noaa.gov/GEOID

18) Are the business processes and management practices assessed to meet changing technology?

Answer: Assessment process is fully implemented for taking advantage of changing technology, process is reviewed on a recurring basis.

Justification Comment: **Attachment(s):** 0

This is currently done by international corporation. Scientists from Canada, Europe and other counties are invited to visit NGS. New technique and computation methods are studied and investigated. New

satellite gravity models (http://www.esa.int/Our_Activities/Observing_the_Earth/GOCE) are used to improve the geoid.

STAGE 7 - Archive

19) Is there an archiving process for the dataset?

Answer: Archival and disposition processes are fully implemented.

Justification Comment: **Attachment(s):** 0

The models are achieved periodically by NGS and NGDC.